

High Speed Rail (Crewe – Manchester)

Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement

Volume 5: Appendix AG-001-00000

Agriculture, forestry and soils

Agriculture, forestry and soils assessment

MA01: Hough to Walley's Green

MA02: Wimboldsley to Lostock Gralam

MA03: Pickmere to Agden and Hulseheath

MA06: Hulseheath to Manchester Airport

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MA03: Pickmere to Agden and Hulseheath

MA06: Hulseheath to Manchester Airport



Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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1 Introduction

1.1 Structure of this appendix

- 1.1.1 This report is an appendix to the agriculture, forestry and soils assessment which forms part of Volume 5 of the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES).
- 1.1.2 This report covers the following community areas (CA):
- Hough to Walley's Green (MA01);
 - Wimboldsley to Lostock Gralam (MA02);
 - Pickmere to Agden and Hulseheath (MA03); and
 - Hulseheath to Manchester Airport (MA06).
- 1.1.3 This appendix provides details of changes to the agriculture, forestry and soils assessment since the production of the High Speed Two (HS2) High Speed Rail (Crewe – Manchester) Environmental Statement (ES) published in 2022¹ (the main ES), and the Supplementary Environmental Statement 1 (SES1) and Additional Provision 1 Environmental Statement (AP1 ES) also published in 2022².
- 1.1.4 This report should be read in conjunction with the agriculture, forestry and soils assessments set out in the main ES Volume 5, Appendices: AG-001-0MA01 to AG-001-0MA06, and SES1 and AP1 ES Volume 5, Appendix: AG-001-00000.
- 1.1.5 This report comprises information on:
- the assessment of effects on agricultural land and soils; and
 - the assessment of effects on farm holdings.
- 1.1.6 This report is structured into two parts: Part 1 – SES2, and Part 2 – AP2 ES. These parts are subdivided into community areas, and then into the relevant design changes and amendments which are relevant to the agriculture, forestry and soils assessment.
- 1.1.7 Maps relevant to this report are contained in the SES2 and AP2 ES Volume 5, Agriculture forestry and soils Map Book:
- Map Series AG-01 – Agricultural Holdings; and
 - Map Series AG-04 – Agricultural Land Quality.

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

1.1.8 In order to differentiate between the original scheme and the subsequent changes, the following terms are used:

- ‘the original scheme’ – the Bill scheme submitted to Parliament in 2022, which was assessed in the main ES;
- ‘the SES1 scheme’ – the original scheme with any changes described in SES1 that are within the existing powers of the Bill;
- ‘the AP1 revised scheme’ – the original scheme as amended by SES1 changes and AP1 amendments;
- ‘the SES2 scheme’ – the original scheme with any changes described in SES1 (submitted in July 2022) and the SES2; and
- ‘the AP2 revised scheme’ – the original scheme as amended by SES1 and SES2 changes (as relevant) and AP2 amendments.

1.2 Scope of the assessment

1.2.1 The scope of the assessment in this report is limited to SES2 design changes and AP2 amendments which are considered likely to introduce a new significant effect, remove a significant effect, or result in a materially different significant effect on agricultural land, farm and forestry holdings to that reported in the main ES or the SES1 and AP1 ES, as relevant. Assessment is also undertaken where new holdings are affected.

1.3 Methodology, assumptions and limitations

1.3.1 This report provides additional baseline soil and agricultural land classification information where the AP2 revised scheme is likely to involve soils and agricultural or forestry land not already reported in the main ES or SES1 and AP1 ES.

1.3.2 The assessment scope, key assumptions and limitations are as set out in the main ES Environmental Impact Assessment Scope and Methodology Report³.

Soils and agricultural land classification

1.3.3 Information gathered relates primarily to the identification of soil resources; the associated physical characteristics of geology, topography and climate which underpin the assessment of agricultural land quality; and the disposition of land uses. The main sources of information have included:

- National Soil Map;
- the regional soils bulletin;

³ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report*, Volume 5, Appendix: CT-001-00001. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

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- solid and superficial deposits from the Geology of Britain viewer;
- grid point meteorological data for Agricultural Land Classification of England and Wales;
- provisional Agricultural Land Classification of England and Wales (1:250,000);
- adjacent field survey data; and
- aerial photography.

1.3.4 Publicly available existing detailed Agricultural Land Classification (ALC) information is generally at a mapped scale of 1:10,000 based on field surveys of soils and agricultural land quality carried out by the Ministry of Agriculture, Fisheries and Farming, and the Soil Survey of England and Wales. A desk-based assessment of soils and agricultural land quality was based on this publicly available data.

Farm holdings

1.3.5 Information obtained from Farm Impact Assessment (FIA) surveys has been taken as a factual representation of local agricultural and commercial forestry interests and has not been subject to further evaluation. Where FIA surveys have not been possible, landholding boundaries and land use have been based on aerial photography and available land registry information.

Part 1: Supplementary Environmental Statement 2

2 SES2 introduction

- 2.1.1 There are no SES2 design changes that will result in any new, different or removed significant effects on agriculture, forestry and soils.

Part 2: Additional Provision 2 Environmental Statement

3 AP2 ES introduction

- 3.1.1 The environmental baseline relevant to the agriculture, forestry and soils assessment of AP2 amendments is described below. Any new, different or removed likely significant environmental effects as a result of the AP2 amendments are then identified and compared to those reported in the main ES or the SES1 and AP1 ES, as relevant.

4 Hough to Walley's Green (MA01)

4.1 Additional land permanently required for modifications to the Warmingham Road and Hall Lane junction (AP2-001-002)

Soils and agricultural land classification

4.1.1 The agricultural land associated with this amendment has soil in the Crewe association. As described in the main ES, soils of the Crewe association comprise fine loamy over clay soils, developed in reddish, stoneless, glacial till and lake deposits overlying the Sidmouth Mudstone. These soils are seasonally waterlogged for long periods during the winter (Wetness Class IV) and the land is limited by soil wetness to Subgrade 3b. This AP2 amendment will require approximately 0.3ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

4.1.2 Table 1 sets out the baseline details of the holding that will be affected by AP2-001-002 in the Hough to Walley's Green (MA01) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and subsequently amended in the SES1 and AP1 ES and the changes as a result of the implementation of this amendment.

Table 1: Summary of assessment of effect on holdings (AP2-001-002)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA01/17 Lane Ends Farm Part owner-occupied, part rented on grazing licence. 93ha dairy and grassland. Part of the land managed as part of the Mid-tier Countryside Stewardship Scheme. Buildings let. Medium sensitivity to change (land affected lies too far from dairy buildings to be utilised by grazing dairy cows).	The main ES reported a temporary requirement for 1.3ha of land from this holding. This requirement was increased to 1.4ha in the SES1 and AP1 ES. AP2-001-002 will increase the area of land temporarily required from the holding to 1.7ha which still represents less than 2% of the total area farmed. Overall, there will be no change in significance of effect from: Land required: Negligible Severance: Negligible Disruption: Negligible Overall temporary assessment: Negligible.	The main ES reported a permanent requirement for 0.5ha from this holding. This requirement did not alter in the SES1 and AP1. AP2-001-002 will not alter this requirement. (Including rounding) the overall permanent requirement will remain as 0.5ha (>1%). There will be no change in significance of effect from: Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.

5 Wimboldsley to Lostock Gralam (MA02)

5.1 Additional land temporarily required for modifications to the A530 King Street, A530 Croxton Lane and B5309 King Street junction (AP2-002-002)

Soils and agricultural land classification

5.1.1 The agricultural land associated with this amendment has soil predominantly in the Blackwood association. As described in the main ES, this group of soils is commonly seasonally waterlogged (WC IV) and limited by soil wetness to Subgrade 3b. Where the land is under-drained, and the soil profiles are in WC I or WC II, the quality of the agricultural land may be increased to Grade 2 or Subgrade 3a, depending on how droughty the soils are during the growing season. This temporary amendment will require 0.2ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

5.1.2 Table 2 sets out the baseline details of the holding that will be affected by AP2-002-002 in the Wimboldsley to Lostock Gralam (MA02) community area. It further details the temporary effects on that holding on agricultural and related interests and the changes as a result of the implementation of this amendment.

Table 2: Summary of assessment of effect on holdings (AP2-002-002)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA02/36 Blueslates Farm* 45ha grassland holding. Medium sensitivity to change This is a newly affected holding.	AP2-002-002 will temporarily require 0.2ha (<1%) of the holding for a temporary highway diversion. Land required: Negligible Severance: Negligible Disruption: Negligible Overall temporary assessment: Negligible.	As this amendment is temporary there are no permanent impacts or effects. Land required: Negligible 0ha; 0% of the holding required. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.

* It has not been possible to arrange farm impact assessment interviews with this holding. Publicly available sources have been used to obtain the information presented.

6 Pickmere to Agden and Hulseheath (MA03)

6.1 Additional land permanently required for modifications to M6 junction 19 (AP2-003-002)

Soils and agricultural land classification

6.1.1 The agricultural land associated with this amendment has soil in the Salop association. This soil association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require 1.4ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

6.1.2 Table 3 sets out the baseline details of the holdings that will be affected by AP2-003-002 in the Pickmere to Agden and Hulseheath (MA03) community area. It further details the temporary and permanent effects on these holdings on agricultural and related interests and the changes as a result of the implementation of this amendment.

Table 3: Summary of assessment of effect on holdings (AP2-003-002)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA03/45 Vale Farm* 28ha grassland holding. Medium sensitivity to change. This is a newly affected holding.	The adoption of AP2-003-002 will temporarily require 0.5ha (2%) of the holding for the highway amendment. Land required: Negligible Severance: Negligible Disruption: Negligible Overall temporary assessment: Negligible.	The adoption of AP2-003-002 will permanently require <0.1ha (<1%) of the holding. Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.
MA03/46 Holly Tree Farm* 14ha grassland holding. Medium sensitivity to change. This is a newly affected holding.	The adoption of AP2-003-002 will temporarily require 0.9ha (6%) of the holding for the highway amendment. Land required: Low Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse.	The adoption of AP2-003-002 will permanently require 0.3ha (2%) of the holding. Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.

* It has not been possible to arrange farm impact assessment interviews with these holdings. Publicly available sources have been used to obtain the information presented.

6.2 Additional land required for the diversion of three high pressure gas pipelines near Millington Clough Ancient Woodland (AP2-003-003)

Soils and agricultural land classification

- 6.2.1 The agricultural land associated with this amendment has soil predominantly in the Salop association, with soil in the Blackwood association in the north of the amendment between the M6 and Agden Brook Farm. The southern end of this AP2 amendment has soil in the Wick association to the north of the A50 between High Legh and the Mere Court Hotel.
- 6.2.2 As described in the main ES, the soil in the Salop association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. The soils in the Blackwood association are seasonally waterlogged (WC IV) and limited by soil wetness to Subgrade 3b. Where the land is under-drained, and the soil profiles are in WC I or WC II, the quality of the agricultural land may be increased to Grade 2 or Subgrade 3a, depending on how droughty the soils are during the growing season. The Wick 1 association comprises soils that are well drained (WC I) coarse loamy typical brown earths, in glaciofluvial and terrace drift of variable stoniness. The deep light loamy and sandy soils of the Wick 1 association are most affected by soil droughtiness. The severity of limitation is determined by factors such as topsoil and subsoil textures, stone content and depth to the sandstone bedrock. As crop moisture deficits are moderate to moderately large, droughtiness limitations are mostly slight to Grade 2, but may be as severe as Subgrade 3b.
- 6.2.3 This amendment will require additional agricultural land (3.1ha) and remove agricultural land previously required (15.7ha). The net effect of the amendment will be to reduce the area of agricultural land required by 12.6ha. The net areas and grades of land affected are:
- Grade 2 - overall reduction of 3.6ha;
 - Subgrade 3a - overall reduction of 5.1ha; and
 - Subgrade 3b - overall reduction of 3.9ha.

Assessment of effects on holdings

- 6.2.4 Table 4 sets out the baseline details of the holdings that will be affected by AP2-003-003 in the Pickmere to Agden and Hulseheath (MA03) community area. It further details the temporary and permanent effects on these holdings on agricultural and related interests as reported in the main ES and subsequently amended in the SES1 and AP1 ES and the changes as a result of the implementation of this amendment.

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6.2.5 This amendment will also affect holdings in the Hulseheath to Manchester Airport (MA06) community area. Effects on these holdings are reported in Section 7 of this report.

Table 4: Summary of assessment of effect on holdings (AP2-003-003)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>MA03/3 Frog Lane Farm Owner occupied (485ha), FBT (160ha) 645ha Dairy, arable and potato farm. Diversified activities include bulk milk tank repairs and tyre repairs. High sensitivity to change.</p>	<p>In the main ES 9.5ha (1%) of the holding was required for the construction of the School Lane realignment, Frog Lane realignment and utility diversions. The SES1 and AP1 amendments reduced this requirement to 9.4ha (1%). The adoption of AP2-003-003 will result in a marginal reduction, albeit (due to rounding) the value remains at 9.4ha, 1%. Land required: Negligible 9.4ha; 1% of holding required. Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse.</p>	<p>In the main ES 1.6ha (<1%) of the holding was required on a permanent basis. In the SES1 and AP1 ES, this requirement was reduced to 1.5ha (<1%) of the holding on a permanent basis. Following the adoption of AP2-003-003 the area required will be marginally reduced, albeit (due to rounding) the value remains the same. Land required: Negligible 1.5ha; <1% of holding required. Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Minor adverse.</p>
<p>MA03/19 Knowlspit Farm with Bentleyhurst Farm 130ha dairy unit rented from the Mere Estate on a Farm Business Tenancy (FBT) agreement. 340 dairy cows. High sensitivity to change.</p>	<p>In the main ES 26.4ha (>20%) of the holding was required for the construction of the scheme. In the SES1 and AP1 ES the area required was reduced to 17.7ha (14%) of holding. Following the adoption of AP2-003-003 the area of land required will be 16.7ha (13%) of the holding. Land required: Medium Severance: Low Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>In the main ES 1.2ha (1%) of the holding was permanently required construction. In the SES1 and AP1 ES, this requirement was increased to 1.3ha (1%) of the holding. The adoption of AP2-003-003 will not alter the permanent impacts and effects as reported in the SES1 and AP1 ES. Land required: Negligible 1.3ha; 1% of holding required. Severance: Low Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to severance.</p>
<p>MA03/20 Winterbottom Farm 80ha sheep (750 ewes) farm rented from the Mere Estate, half on an Agricultural Holdings Act (AHA) tenancy, half on an FBT. Medium sensitivity to change.</p>	<p>In the main ES 75.4ha (94%) of the holding was required for the construction of the scheme. This requirement was not altered by the SES1 and AP1 ES. The adoption of AP2-003-003 will result in a reduction in the area of required to 74.4ha. Land required: High 74.4ha, 93% of the holding required.</p>	<p>In the main ES 33.9ha (42%) of the holding was required on a permanent basis. This requirement was increased in the SES1 and AP1 ES to 34.2ha (43%). Following the adoption of AP2-003-003 there will be a marginal reduction in the area of land required on a permanent basis to 33.7ha.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>Severance: Negligible Disruption: Low Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>Land required: High 33.7ha, 42% of the holding required. Severance: Low Access to residual farmland will be possible via the Mere Bridleway 1/1 accommodation underpass. Infrastructure: Negligible Overall permanent assessment: Major/moderate adverse due to the proportion of holding required.</p>
<p>MA03/22 Yew Tree Farm Effectively owner occupied – either owned by occupier or rented on an AHA tenancy from parents. 81ha arable and dairy (90 cows). Diversified activities include renting land to model aeroplane club. High sensitivity to change.</p>	<p>In the main ES 12.2ha (15%) of the holding was required for the construction of the Hoo Green north cutting, Hoo Green Lane diversion, A50 realignment, soil stores and utility diversions. The SES1 and AP1 ES reported a marginal reduction in the area of land required to 12.1ha (15%). The adoption of AP2-003-003 will reduce this requirement to 11.7ha. Land required: Medium: 11.7ha, 14% of the holding. Severance: Medium Access to grazing land may be compromised during utility diversion works. Disruption: Low Potential for dust arising from construction to affect housed livestock. Overall temporary assessment: Major/moderate adverse due to the proportion of land required.</p>	<p>In the main ES 7.5ha (9%) of the holding was required on a permanent basis for the construction of the scheme. This requirement was not altered by the SES1 and AP1 ES. The adoption of AP2-003-003 will reduce this requirement to 7.1ha (9%) of the holding. Land required: Low Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Moderate adverse due to the proportion of land required.</p>
<p>MA03/23 Moss Farm and Park Farm Moss Farm - 34ha owner occupied; Park Farm- 53ha rented on AHA. 87ha arable and beef cattle (store cattle reared to 18 months). Medium sensitivity to change.</p>	<p>In the main ES 10.5ha (12%) of the holding required for the construction of the High Legh cutting, Peacock Lane realignment, Peacock Lane satellite compound and soil stores. This requirement was reduced to 9.8ha in the SES1 and AP1 ES. The adoption of AP2-003-003 will reduce this requirement to 9.4ha. Land required: Medium 9.4ha, 11% of the holding required. Severance: Negligible Disruption: Negligible</p>	<p>In the main ES 7.4ha (8%) of the holding was required on a permanent basis. This was reduced to 6.8ha in the SES1 and AP1 ES. Following the adoption of AP2-003-003 the total area of land required will be 6.2ha. Land required: Low 6.2ha, 7% of the holding required. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Minor adverse.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	Overall temporary assessment: Moderate adverse due to the proportion of holding required.	
<p>MA03/24 Brookkeyes Farm* 11ha grassland holding. Medium sensitivity to change.</p>	<p>In the main ES the area required on a temporary basis was 10.7ha (97%) of the holding. The SES1 and AP1 ES reduced this requirement to 10.6ha (96%). The adoption of AP2-003-003 will increase the area of land temporarily required by 0.1ha. Land required: High 10.8ha, 98% of the holding. Severance: Negligible Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>In the main ES the area of land required on a permanent basis was 3.3ha (30%) of the holding. This requirement was not altered by the SES1 and AP1 ES. The adoption of AP2-003-003 will not alter the permanent impacts and effects for this holding which remain as reported in the main ES or SES1 and AP1 ES. Land required: High 3.3ha; 30% of the holding. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Major/moderate adverse due to the proportion of holding required.</p>
<p>MA03/25 Hulme Barn Farm Owner occupied. 81ha mainly arable with grassland (haylage). Medium sensitivity to change.</p>	<p>In the original scheme some 49.9ha (62%) of holding was required for the construction of the High Legh cutting, High Legh west cutting, Hulseheath south embankment, Bowden View transfer node, soil stores and utility diversions. The SES1 and AP1 amendments reduced that requirement to 47.8ha (59%) of the holding. The adoption of AP2-003-003 will reduce the area required to 47.5ha. Land required: High 47.5ha; 59% of the holding required. Severance: Low Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>In the main ES the area of land required on a permanent basis was 14.7ha (18%) of the holding. This requirement was marginally reduced in the SES1 and AP1 ES to 14.6ha (18%). The adoption of AP2-003-003 will marginally reduce the area of land permanently required to 14.5ha. Land required: Medium 14.5ha; 18% of holding required. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required.</p>
<p>MA03/28 Land at Mere Hall Farm* 50ha arable holding. Medium sensitivity to change.</p>	<p>In the original scheme 7.9ha (16%) of the holding was required for utility diversions. The SES1 and AP1 amendments reduced that requirement to 7.8ha (16%) of the holding. The adoption of AP2-003-003 will reduce this requirement to 7.5ha. Land required: Medium 7.5ha; 15% of the holding required.</p>	<p>In the main ES the area of land required on a permanent basis was <0.1ha (<1%) of the holding. This requirement was increased in the SES1 and AP1 ES to 0.7ha (1%). The adoption of AP2-003-003 will reduce the area of land permanently required to 0.4ha. Land required: Negligible</p>

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MA01, MA02, MA03 and MA06

Agriculture, forestry and soils assessment

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of land required.	0.4ha; <1% of holding permanently required. Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Negligible.
MA03/29 Land at Hulse Heath Lane, Bucklow Hill 4.4ha grassland holding. Medium sensitivity to change.	In the original scheme 4.1ha (94%) of the holding was required for utility diversions. This requirement was not altered in the SES1 and AP1 ES. The adoption of AP2-003-003 will marginally reduce the area of land required to 4ha. Land required: High 4ha; 91% of holding required for utility diversions. Severance: Negligible Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of land required.	There was no land required on a permanent basis in either the main ES or the SES1 and AP1 ES. The adoption of AP2-003-003 does not alter this position. Land required: Negligible No land permanently required. Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Negligible.
MA03/30 Hulse Heath Farm* 0.8ha grassland holding. Low sensitivity to change.	In the original scheme 0.4ha (48%) of the holding was required for utility diversions. This area was reduced very slightly in the SES1 and AP1 ES, albeit due to rounding the area remade the same; 0.4ha (46%). The adoption of AP2-003-003 will reduce the area of land affected to 0.1ha. Land required: Medium 0.1ha; 13% of holding required for utility diversions. Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse due to the proportion of land required.	There was no land required on a permanent basis in either the main ES or the SES1 and AP1 ES. The adoption of AP2-003-003 does not alter this position. Land required: Negligible No land permanently required. Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Negligible.
MA03/31 Land at Chapel Lane, Bucklow Hill (1)* 1.6ha grassland holding. Low sensitivity to change.	In the original scheme 1.5ha (93%) of the holding was required for utility diversions. This area was reduced slightly in the SES1 and AP1 ES to 1.4ha (90%). The adoption of AP2-003-003 will marginally increase the area of land affected to 1.6ha. Land required: High	In the main ES the area of land required on a permanent basis was 0.1ha (8%). This requirement was not changed in the SES1 and AP1 ES. The adoption of AP2-003-003 will not alter the permanent impacts and effects for this holding which remain

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>1.6ha; 97% of holding required. Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of land required.</p>	<p>as reported in the main ES and SES1 and AP1 ES. Land required: Low 0.1ha; 8% of holding permanently required. Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Negligible.</p>
<p>MA03/32 Land at Peacock Lane, Millington (1) Owner occupied. 15ha grassland holding let to others. Low sensitivity to change.</p>	<p>In the main ES 12.1ha (81%) of the holding was required for the construction of the High Legh west cutting, Hulseheath south embankment, Wrenshot Lane transfer node, soil stores and utility diversions. This requirement was not changed in the SES1 and AP1 ES. The adoption of AP2-003-003 will marginally reduce the area of land required 12ha. Land required: High 12ha; 80% of holding required. Severance: High Land will be severed by the HS2 route with access unavailable. Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of land required and severance.</p>	<p>In the main ES the area of land permanently required was 10.2ha (68%) of the holding. This area was reduced in the SES1 and AP1 ES to 7.8ha (52%). The adoption of AP2-003-003 will not alter this requirement. Land required: High 7.8ha, 52% of the holding required. Severance: Medium Access to residual severed land will be available via the public highway and HS2 access tracks. Infrastructure effects: Negligible Overall permanent assessment: Moderate adverse due to the proportion of land required.</p>
<p>MA03/40 Agden Brook Farm Mainly owner occupied (431ha) and includes Little Heatley Farm, Wet Gate Lane. Also includes Warburton Park (113ha) which is rented on an FBT; other land rented on various annual agreements (333ha). 877ha Dairy (460 cows), beef cattle (300 sold per annum), arable (440ha), potatoes on contract. Diversified activities include property rentals. High sensitivity to change. Agden Brook Farm has land in both MA03 and MA04, with the assessment reported here and in SES2 and AP2 ES Volume 2,</p>	<p>In the original scheme 137.2ha (16%) of the holding was required for construction. The SES1 and AP1 ES reported a reduction in that requirement to 20.1ha (2%) of the holding but with a residual significant severance impact. AP2-003-003 will reduce the area of land required still further to 7.5ha (<1%) and remove the severance. Land required: Negligible 7.5ha; <1% of the holding required. Severance: Negligible Disruption: Negligible Overall temporary assessment: Negligible</p>	<p>In the main ES the area of land permanently required was 35.6ha (4%) of the holding, with a significant severance impact. In the SES1 and AP1 ES the permanent requirement for any land was removed. Likewise, AP2-003-003 will not require any land on a permanent basis and the permanent impacts and effects remain as reported in the SES1 and AP1 ES. Land required: Negligible 0ha; 0% of holding required. Severance: Negligible Infrastructure: Negligible Overall temporary assessment: Negligible.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
Pickmere to Agden and Hulseheath report (MA03).	This is a change from moderate adverse in the SES1 and AP1 ES.	
MA03/41 Booth Bank Farm* 8.6ha grassland holding with children's activity farm. Medium sensitivity to change.	In the original scheme 6ha (69%) of the holding was required for construction. The SES1 and AP1 amendments reduced that requirement to 5.9ha (68%) of the holding. The adoption of AP2-003-003 will reduce that requirement still further to 4.7ha. Land required: High 4.7ha; 55% of holding required. Severance: Negligible Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.	In the main ES the area of land permanently required was <0.1ha (<1%) of the holding. This requirement was not altered in the SES1 and AP1 ES. The effects as a result of AP2-003-003 will remain as reported in the SES1 and AP1 ES. Land required: Negligible <0.1ha; <1% of holding required. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.
MA03/47 Land at Thowler Lane* 1.0ha grassland holding. Low sensitivity to change. This is a newly affected holding.	Land required: High AP2-003-003 will require the temporary acquisition of 0.7ha (70%) of land for the highway and utility diversions. Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required. This is a new significant effect.	The adoption of AP2-003-003 will not require any land on a permanent basis. Land required: Negligible 0ha; 0% of holding required. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.

* It has not been possible to arrange farm impact assessment interviews with these holdings. Publicly available sources have been used to obtain the information presented.

6.3 Additional land permanently required for modifications to M6 junction 20a (AP2-003-004)

Soils and agricultural land classification

- 6.3.1 The agricultural land associated with this amendment has soil in the Salop association. Soils in this association comprise slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will affect 1.5ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

6.3.2 Table 5 sets out the baseline details of the holdings that will be affected by AP2-003-004 in the Pickmere to Agden and Hulseheath (MA03) community area. It further details the temporary and permanent effects on these holdings on agricultural and related interests and the changes as a result of the implementation of this amendment.

Table 5: Summary of assessment of effect on holdings (AP2-003-004)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA03/48 Land at Cliff Lane* 12ha grassland holding. Medium sensitivity to change. This is a newly affected holding.	The adoption of AP2-003-004 will require the acquisition of 0.6ha (>5%) of the holding for the highway amendment. Land required: Low Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse.	AP2-003-004 will require the permanent acquisition of <0.1ha (<1%) of the holding. Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall temporary assessment: Negligible.
MA03/49 Masseybrook Farm* 17ha grassland holding. Medium sensitivity to change. This is a newly affected holding.	AP2-003-004 will require the temporary acquisition of 0.9ha (>5%) of the holding for the highway amendment. Land required: Low Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse.	AP2-003-004 will require the permanent acquisition of <0.1ha (<1%) of the holding. Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall temporary assessment: Negligible.

* It has not been possible to arrange farm impact assessment interviews with these holdings. Publicly available sources have been used to obtain the information presented.

6.4 Additional land permanently required for a revised National Grid 400kV overhead power line diversion near Ryecroft Covert LWS (AP2-006-006)

Soils and agricultural land classification

6.4.1 The majority of this amendment lies in the Hulseheath to Manchester Airport (MA06) community area. The impacts and effect of this amendment on agricultural land and soil are reported in the next section of this document.

Assessment of effects on holdings

6.4.2 Table 6 sets out the baseline details of the holding that will be affected by AP2-006-006 in the Pickmere to Adgen and Hulseheath (MA03) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and subsequently amended in the SES1 and AP1 ES and the changes as a result of the implementation of this amendment.

Table 6: Summary of assessment of effect on holdings (AP2-006-006)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA03/37 Woolstencroft Farm Part owned (52ha). Part rented from National Trust (87ha). Other land rented locally. 139ha dairy (300 cows) holding utilising 75ha grazing with off-site arable cropping. High sensitivity to change. Medium sensitivity to change as the affected land is off lying from the main holdings and no dairy cow grazing is affected.	In the original scheme 13.7ha (10%) of holding was required for the construction of the High Legh cutting, Heatley south embankment, Bridgewater Canal satellite compound and soil stores. The SES1 and AP1 ES reduced that requirement to 2.5ha (2%) of the holding. The adoption of the AP2-006-006 (in the MA06 area) will increase the area of land required on a temporary basis by 0.8ha. Land required: Negligible 3.3ha; 2% of the holding required for utility works. Severance: Low Disruption: Negligible Overall temporary assessment: Negligible.	In the original scheme 5.7ha (4%) of the holding was required on a permanent basis. The SES1 and AP1 ES removed the requirement for any land on a permanent basis. The adoption of the AP2-006-006 will not alter that position. Land required: Negligible 0ha; 0% of the holding required. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.

7 Hulseheath to Manchester Airport (MA06)

7.1 Additional land permanently required for the diversion of three high pressure gas pipelines near Millington Clough Ancient Woodland (AP2-003-003)

Soils and agricultural land classification

7.1.1 The majority of this amendment lies in the Pickmere to Agden and Hulseheath (MA03) community area. The impacts and effect of this amendment on agricultural land and soil have been set out in the previous section of this document.

Assessment of effects on holdings

7.1.2 Table 7 sets out the baseline details of the holding that will be affected by AP2-003-003 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and the changes as a result of the implementation of this amendment.

7.1.3 This amendment will also affect holdings in the Pickmere to Agden and Hulseheath (MA03) community area. Effects on these holdings are reported in Section 6 of this report.

Table 7: Summary of assessment of effect on holdings (AP2-003-003)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/1 Land at Chapel Lane, Bucklow Hill (2)* 0.5ha residential with grassland paddock. Low sensitivity to change.	In the original scheme 0.1ha (20%) of the holding was required for construction. The adoption of AP2-003-003 will result in a reduction the area of land required (<0.1ha) during construction. Land required: Medium <0.1ha; 18% of holding required for diversion of utility supplies. Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse.	In the original scheme there was no land required on a permanent basis. This is not altered by this amendment. Land required: Negligible 0ha; 0% of the holding required. Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Negligible.
MA06/2 Moss House Farm 47ha: 36ha owned; 10ha rented from Tatton Estate; 1ha rented locally).	In the original scheme 29.7ha (63%) of the holding was required for the construction of the Hulseheath south and north embankments, Peacock Lane realignment and	In the original scheme 12.2ha (26%) of the holding was required on a permanent basis. This is not altered by this amendment.

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>Beef cattle and sheep Contract shepherding services also undertaken. Medium sensitivity to change.</p>	<p>viaduct, Millington Clough underbridge, Agden Brook viaduct and soil stores. The adoption of AP2-003-003 will reduce the area of land required by 3ha to 26.7ha (57%) of the holding. Land required: High Severance: Medium Access to severed farmland will be possible along public highways although access may be compromised during construction. Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>Land required: High Severance: Medium Access to severed farmland will be possible along public highways. Infrastructure: Negligible Overall permanent assessment: Major/moderate adverse due to the proportion of holding required.</p>
<p>MA06/4 Millington House Nursery Owner occupied 2.6ha specialist horticultural unit with glasshouses – specialising in bedding plants for hanging basket production; grassland paddock used for hay making. Glasshouses high sensitivity to change. Grassland paddock low sensitivity to change.</p>	<p>In the original scheme 1.5ha (58%) of the holding was required for the construction of the Hulseheath north embankment, Millington Clough underbridge and soil stores. AP2-003-003 will increase the area of land required by 0.1ha to 1.6ha (62%) of the holding. Land required: High Severance: Medium Disruption: Low Overall temporary assessment: Moderate adverse due to the proportion of the land required.</p>	<p>In the original scheme 0.9ha (35%) of the holding was required on a permanent basis. This is not altered by this amendment. Land required: High Severance: Medium Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of the holding required.</p>
<p>MA06/5 Ivy House Farm 11ha owner occupied Grassland holding with 27 stables used for commercial livery; woodland rides also available on owned property. Medium sensitivity to change.</p>	<p>In the original scheme 7.4ha (67%) of the holding is required for the construction of the Hulseheath north embankment, Millington Clough underbridge, Ivy Farm accommodation access, utility diversion, construction access to balancing ponds and soil stores. The adoption of AP2-003-003 will increase the area of land required during construction by 1ha to 8.4ha (76%) of the holding. Land required: High Severance: Medium Disruption: Low Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>In the original scheme 2ha (18%) of the holding was required on a permanent basis. This is not altered by this amendment. Land required: Medium Severance: Medium Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of the holding required and severance.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>MA06/6 Millington Hall Farm – managed in hand by Tatton Estate (Arden Enterprises). Total area farmed 300ha. Arable and sheep. Buildings underused for agriculture, proposed commercial/residential development; house let on an Assured shorthold tenancy. Medium sensitivity to change.</p>	<p>In the original scheme 54ha (18%) of the holding was required for the construction of the Hulseheath north embankment, Millington cutting, Agden Brook viaduct and Agden Brook viaduct satellite compound, Millington Lane realignment, Ashley west and east embankments, Ashley Road diversion, Ashley railhead, utility diversions and soil stores.</p> <p>The adoption of AP2-003-003 will reduce the area of land required by 2.2ha to 51.8ha (17%).</p> <p>Land required: Medium Severance: Medium Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p> <p>Additional land will also be required for: AP2-006-006 (<0.1ha); and AP2-006-014 (2.9ha).</p> <p>Should all the amendments be adopted the total area of land required from this holding will be 54.7ha; 18% but the overall effect will remain unaltered as moderate adverse.</p>	<p>In the original scheme 19.4ha (7%) of the holding was required on a permanent basis. This is not altered by this amendment. Land required: Low Severance: Medium Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to severance.</p> <p>Note: whilst Amendment AP2-006-006 will not alter the permanent land required, Amendment AP2-006-014 will marginally reduce the area of land permanently required to 19.3ha (6%) of the holding. The overall effect will remain unaltered as moderate adverse.</p>

* It has not been possible to arrange farm impact assessment interviews with this holding. Publicly available sources have been used to obtain the information presented.

7.2 Additional land permanently required to relocate Rostherne Mere groundwater recharge trenches north of Cherry Tree Lane (AP2-006-003)

Soils and agricultural land classification

- 7.2.1 The agricultural land associated with this amendment has soil in the Salop association. As described in the main ES, this association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil

wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require 0.4ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

7.2.2 Table 8 sets out the baseline details of the holding that will be affected by AP2-006-003 in the Pickmere to Agden and Hulseheath (MA03) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 8: Summary of assessment of effect on holdings (AP2-006-003)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>MA06/8 Yarwood Heath Farm including Cherry Tree Farm. Managed in hand by Tatton Estate (Marsh Partnership). 300ha arable and forage grassland managed by agricultural contractors. Commercial lets at Cherry Tree Farm. Medium sensitivity to change.</p>	<p>In the original scheme 74.7ha (25%) of the holding was required for the construction of the Rostherne cutting, Yarwood Heath Farm accommodation access realignment and overbridge, Birkin Brook embankment, Ashley infrastructure maintenance base – rail (IMB-R), Rostherne cutting satellite compound and transfer node, Blackburn’ s Brook north viaduct, west and east satellite compounds, Ashley IMB-R satellite compound and transfer node, utility diversions and soil stores.</p> <p>AP2-006-003 will increase the area of land required from this holding by 0.4ha to 75.1ha (25%).</p> <p>Land required: High Severance: Low Disruption: Low</p> <p>Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p> <p>Additional land will also be required for: AP2-006-006 (1.4ha); and AP2-006-014 (9.0ha).</p> <p>Should all these amendments be adopted the total area of land required from this holding will be 85.5ha; 29%. The overall effect will remain unaltered as major/moderate adverse.</p>	<p>In the original scheme 30.7ha (10%) of the holding was required on a permanent basis.</p> <p>AP2-006-003 will increase this permanent requirement to 30.8ha (10%) of the holding.</p> <p>Land required: Medium Severance: Low Infrastructure: High Property demolition at Cherry Tree Farm.</p> <p>Overall permanent assessment: Major/moderate adverse due to property demolition and the proportion of holding required.</p> <p>No additional land is required for: AP2-006-006. Additional land (0.3ha) is required for AP2-006-014 and will increase the total area of land permanently required to 31.1ha (10%) of the holding.</p> <p>The overall effect will remain unaltered as major/moderate adverse.</p>

7.3 Additional land permanently required for a revised National Grid 400kV overhead power line diversion near Ryecroft Covert LWS (AP2-006-006)

Soils and agricultural land classification

- 7.3.1 The agricultural land associated with this amendment has soil predominantly in the Blackwood association, with some soil in the Conway association in the vicinity of the River Bollin. The main ES describes how the soils in the Blackwood association are commonly seasonally waterlogged (WC IV) and limited by soil wetness to Subgrade 3b. Where the land is under-drained, and the soil profiles are in WC I or WC II, the quality of the agricultural land may be increased to Grade 2 or Subgrade 3a, depending on how droughty the soils are during the growing season. The Conway association comprises deep, stoneless, fine silty soils developed in alluvium in the floodplains of the River Bollin. These soils are usually greyish brown or grey and are affected by high groundwater. They are waterlogged for long periods during the winter (WC IV). The quality of agricultural land is limited by soil wetness, and possibly by the risk of flooding, to mainly Subgrade 3b.
- 7.3.2 This amendment will require 16.4ha of moderate agricultural land in Subgrade 3b during construction.

Assessment of effects on holdings

- 7.3.3 Table 9 sets out the baseline details of the holdings in this community area that will be affected by AP2-006-006 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on these holdings on agricultural and related interests as reported in the main ES and the changes as a result of the implementation of this amendment.
- 7.3.4 This amendment will also affect holdings in the Pickmere to Agden and Hulseheath (MA03) community area. Effects on these holdings are reported in Section 6 of this report.

Table 9: Summary of assessment of effect on holdings (AP2-006-006)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/6 Millington Hall Farm – managed in hand by Tatton Estate (Arden Enterprises). Total area farmed 300ha. Arable and sheep. Buildings underused for agriculture, proposed commercial/residential	In the original scheme 54ha (18%) of the holding was required for the construction of the Hulseheath north embankment, Millington cutting, Agden Brook viaduct and Agden Brook viaduct satellite compound, Millington Lane realignment, Ashley west and east embankments, Ashley Road	In the original scheme 19.4ha (7%) of the holding was required on a permanent basis. This is not altered by this amendment. Land required: Low Severance: Medium Infrastructure: Negligible

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>development; house let on an Assured shorthold tenancy Medium sensitivity to change.</p>	<p>diversion, Ashley railhead, utility diversions and soil stores. AP2-006-006 will require a marginal increase in the area of land required (<0.1ha) but due to rounding the values remain unaltered. Land required: Medium Severance: Medium Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p> <p>Additional (or reduced) land is also required for: AP2-006-003 (minus 2.2ha); and AP2-006-014 (2.9ha). Should all the amendments be adopted the total area of land required from this holding will be 54.7ha; 18%. The overall effect will remain unaltered as moderate adverse.</p>	<p>Overall permanent assessment: Moderate adverse due to severance.</p> <p>Amendment AP2-003-003 will not alter that requirement. Amendment AP2-006-014 will marginally reduce the area of land permanently required to 19.3ha (6%) of the holding. The overall effect will remain unaltered as moderate adverse.</p>
<p>MA06/8 Yarwood Heath Farm including Cherry Tree Farm. Managed in hand by Tatton Estate (Marsh Partnership). 300ha arable and forage grassland managed by agricultural contractors. Commercial lets at Cherry Tree Farm. Medium sensitivity to change.</p>	<p>In the original scheme 74.7ha (25%) of the holding was required for the construction of the Rostherne cutting, Yarwood Heath Farm accommodation access realignment and overbridge, Birkin Brook embankment, Ashley infrastructure maintenance base – rail (IMB-R), Rostherne cutting satellite compound and transfer node, Blackburn Brook north viaduct west and east satellite compounds, Ashley IMB-R satellite compound and transfer node, utility diversions and soil stores. AP2-006-006 will increase the area of land required from this holding by 1.4ha to 76.1ha (25%). Land required: High Severance: Low Disruption: Low Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p> <p>Additional land will also be required for:</p>	<p>In the original scheme 30.7ha (10%) of the holding was required on a permanent basis. This is not altered by the adoption of this amendment. Land required: Medium Severance: Low Infrastructure: High Property demolition at Cherry Tree Farm. Overall permanent assessment: Major/moderate adverse due to property demolition and the proportion of holding required.</p> <p>Additional land is required for: AP2-006-003 (0.1ha); and AP2-006-014 (0.3ha). Should all these amendments proceed the total area of land permanently required will be 31.1ha (10%) of the holding. The overall effect will remain unaltered as major/moderate adverse.</p>

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Agriculture, forestry and soils assessment

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>AP2-006-003 (0.4ha); and AP2-006-014 (9.0ha).</p> <p>Should all these amendments be adopted the total area of land required from this holding will be 85.5ha (29%).</p> <p>The overall effect will remain unaltered as major/moderate adverse.</p>	
<p>MA06/11 Ryecroft Farm* 54ha arable and grassland holding. Medium sensitivity to change.</p>	<p>In the original scheme 6ha (11%) of the holding was required for a utility diversion.</p> <p>AP2-006-006 will increase the area of land required during construction by 2.6ha to 8.6ha (16%). Land required: Medium Severance: Low Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p> <p>Additional land will also be required for AP2-006-014 (16.6ha). Should both these amendments be adopted the total area of land required from this holding during construction will be 25.2ha (47%) of the holding.</p> <p>Combined, this will generate a new (changed) major/moderate significant effect.</p>	<p>The original scheme did not require any land on a permanent basis. AP2-006-006 will not alter this requirement.</p> <p>Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.</p>
<p>MA06/12 Bow Green Farm* 59ha arable and grassland holding. Medium sensitivity to change.</p>	<p>In the original scheme 0.3ha (1%) of the holding was required for a utility diversion.</p> <p>AP2-006-006 will marginally increase the area of land required during construction (<0.1ha). Due to rounding the total area required for the construction will remain as 0.3ha (1%) of the holding. Land required: Negligible Severance: Low Disruption: Negligible Overall temporary assessment: Minor adverse.</p>	<p>The original scheme did not require any land on a permanent basis. AP2-006-006 will not alter this requirement.</p> <p>Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.</p>
<p>MA06/13 Birkin Farm</p>	<p>In the original scheme 5.3ha (66%) of the holding was required for the</p>	<p>In the original scheme 5.1ha (64%) of the holding was required on a permanent basis.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>8ha equestrian (commercial) holding owned by Tatton Estate and rented on a rolling Farm Business Tenancy (FBT). Holiday lets. Medium sensitivity to change.</p>	<p>construction of the Blackburn's Brook north viaduct and soil stores. AP2-006-006 will result in a marginal reduction (<0.1ha) though due to rounding the total area required for construction will remain as 5.3ha (66%) of the holding. Land required: High Severance: Negligible Disruption: Low Riding of horses close to construction activities may need to be limited. Overall temporary assessment: Major/moderate adverse due to the proportion of land required.</p>	<p>This is not altered by this amendment. Land required: High Severance: Negligible Infrastructure effects: Negligible Overall permanent assessment: Major/moderate adverse due to the proportion of the holding required.</p>
<p>MA06/15 Birtles Farm* 50ha arable and grassland holding. Medium sensitivity to change.</p>	<p>In the original scheme 4.3ha (9%) of the holding was required for a utility diversion. AP2-006-006 will increase the area of land required by 1.1ha to 5.4ha (>10%) of the holding. Land required: Medium Severance: Low Disruption: Negligible Overall temporary assessment: Moderate adverse. This is a new significant effect.</p>	<p>The original scheme did not require any land on a permanent basis. AP2-006-006 will not alter this requirement. Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.</p>
<p>MA06/41 Stamford Farm* 53ha grassland holding. Medium sensitivity to change. This is a newly affected holding.</p>	<p>Land required: Medium 9.7ha; 18% of holding required for utility diversion. Severance: Low Access to land whilst utility works are undertaken may be compromised. Disruption: Negligible Overall temporary assessment: Moderate adverse. This is a new significant effect.</p>	<p>No land permanently required, 0ha; 0% Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.</p>
<p>MA06/42 Land at Park Lane* 13ha grassland holding. Medium sensitivity to change. This is a newly affected holding.</p>	<p>Land required: Medium 1.5ha; 12% of holding required for utility diversion. Severance: Low Access to land whilst utility works are undertaken may be compromised. Disruption: Negligible</p>	<p>No land permanently required, 0ha; 0% Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.</p>

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	Overall temporary assessment: Moderate adverse This is a new significant effect.	

* It has not been possible to arrange farm impact assessment interviews with these holdings. Publicly available sources have been used to obtain the information presented.

7.4 Additional land permanently required for watercourse diversions at Mobberley Road (AP2-006-010)

Soils and agricultural land classification

7.4.1 The agricultural land associated with this amendment has soil in the Salop association. This soil association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require 0.6ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

7.4.2 Table 10 sets out the baseline details of the holding that will be affected by AP2-006-010 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 10: Summary of assessment of effect on holdings (AP2-006-010)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/16 Kell House Farm 300ha arable and beef holding. 182ha rented from Tatton Estate on FBT; land also rented from Lower House Farm. Agricultural contracting undertaken. Medium sensitivity to change.	In the original scheme 7.4ha (2%) of the holding was required for the construction of the Ashley east embankment, Mobberley Road realignment and utility diversions. AP2-006-010 will increase the area of land required from this holding during construction by 0.6ha to 8ha (3%). Land required: Negligible Severance: Negligible Disruption: Negligible Overall temporary assessment: Negligible.	In the original scheme 1.7ha (1%) of the holding was required on a permanent basis. Following the adoption of this amendment the total area required on a permanent basis will be 1.6ha (1%). Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.

7.5 Additional land temporarily required for the operation of Ashley railhead near Sugar Brook Ancient Woodland (AP2-006-011)

Soils and agricultural land classification

7.5.1 The agricultural land associated with this amendment has soil in the Salop association. As described in the main ES, this association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will result in a reduction of 0.2ha of agricultural land in Subgrade 3b required for construction.

Assessment of effects on holdings

7.5.2 Table 11 sets out the baseline details of the holding that will be affected by AP2-006-011 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 11: Summary of assessment of effect on holdings (AP2-006-011)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/17 Sugar Brook Farm 50ha arable, sheep and free-range poultry holding. Owned by Tatton Estate rented on AHA: 45ha) and balance on annual grazing agreement. Bed and breakfast farm diversification. Medium sensitivity to change.	In the original scheme 35.3ha (71%) of the holding was required for the construction of the Ashley west and east embankments, Ashley Road diversion, Ashley railhead, the Birkinheath Covert satellite compound, Mobberley Road realignment, Mobberley Road south and north satellite compounds, Public Right of Way (PRoW) and utility diversions, and soil stores. AP2-006-011 will involve different areas of agricultural land, albeit the actual area required will be reduced by 0.2ha. The total area required will be 35.1ha; 70% of the holding. Land required: High Severance: Negligible Disruption: Low Disruption due to dust possible and extent of works could reduce uptake by bed and breakfast customers.	In the original scheme 13.0ha (26%) of the holding was required for the Ashley west embankment, Ashley Road diversion, Mobberley Road realignment, ecological and landscape mitigation. The adoption of AP2-006-011 will reduce the area of land permanently required from this holding by 0.4ha to 12.6ha (25%) of the holding. Land required: High Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Major/moderate adverse due to the proportion of holding required.

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.	

7.6 Additional land permanently required for the revised realignment of Tributary of Birkin Brook 2 south of Thorns Green embankment (AP2-006-012)

Soils and agricultural land classification

7.6.1 The agricultural land associated with this amendment has soil in the Salop association. As described in the main ES, this association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require approximately 0.2ha of agricultural land in Subgrade 3b and is a permanent amendment.

Assessment of effects on holdings

7.6.2 Table 12 sets out the baseline details of the holding that will be affected by AP2-006-012 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 12: Summary of assessment of effect on holdings (AP2-006-012)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/18 Lower House Farm* 14ha arable and grassland holding. Low sensitivity to change.	In the original scheme 1.8ha (13%) of the holding was required for the construction of the Ashley east embankment and Mobberley Road realignment. AP2-006-012 will increase the area of land required by approximately 0.2ha during construction to 2ha (14%) of the holding. Land required: Medium Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse.	In the original scheme 1.5ha (11%) of the holding was required on a permanent basis. Due to rounding the adoption of AP2-006-012 will only increase this requirement to 1.6ha (11%) of the holding. Land required: Medium Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Minor adverse.

* It has not been possible to arrange farm impact assessment interviews with this holding. Publicly available sources have been used to obtain the information presented.

7.7 Additional land required for the revised diversion of a Scottish Power 11kV overhead line, north of Brickhill Wood Ancient Woodland (AP2-006-013)

Soils and agricultural land classification

7.7.1 The agricultural land associated with this amendment has soil in the Salop association. As described in the main ES, this association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require a further 0.1ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

7.7.2 Table 13 sets out the baseline details of the holding that will be affected by AP2-006-013 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 13: Summary of assessment of effect on holdings (AP2-006-013)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>MA06/19 Higher Thorns Green Farm 44ha owner occupied. Arable and beef holding with commercial equestrian livery (x40) stables. Care farm 'Fairfield Farm Project' also provided. Medium sensitivity to change.</p>	<p>In the original scheme 16.7ha (38%) of the holding was required for the construction of the Thorns Green embankment, River Bollin south embankment, M56 amendments, Brickhill Lane diversion, Castle Mill Lane diversion and satellite compound, utility diversions and soil stores. AP2-006-013 will increase this requirement by 0.1ha to 16.8ha (38%) from this holding. Land required: High Severance: Medium Access to severed farmland will be possible along public highways and HS2 access routes but may be compromised during construction.</p>	<p>In the original scheme 13.3ha (30%) of the holding was required on a permanent basis. AP2-006-013 will not require any additional land on a permanent basis and the assessment remains unaltered. Land required: High Severance: Medium Land severed accessible via public highways and HS2 access routes. Infrastructure: High Demolition of residential properties and agricultural buildings. Overall permanent assessment: Major/moderate adverse due to the</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>Disruption: Low Activities on the care farm may need careful management whilst construction activities are being undertaken. Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p> <p>Additional land will also be required for AP2-006-014 (4.4ha). Should both these amendments be adopted the total area of land required from this holding will be 21.2ha (48%). The overall effect will remain unaltered as major/moderate adverse.</p>	<p>proportion of holding required and property demolition. AP2-006-014 will require a further 1.6ha on a permanent basis resulting in a permanent requirement of 14.9ha (34%) of the holding but the overall effect will remain unaltered as major/moderate adverse.</p>
<p>MA06/24 Chapel House Farm Owner-occupied. 24ha equestrian (non-commercial). Low sensitivity to change.</p>	<p>In the original scheme 1.9ha (8%) of the holding was required for the construction of the Castle Mill Lane realignment, Castle Mill Lane satellite compound and utility diversions. AP2-006-013 will require a further approximately 0.1ha from this holding to 2ha (8%). Land required: Low Severance: Negligible Disruption: Low Riding of horses close to construction activities may need to be limited. Overall temporary assessment: Negligible in the original scheme.</p> <p>Additional land will also be required for AP2-006-014 (1.2ha). Should both these amendments be adopted the total area of land required from this holding will be 3.2ha; 13% and the overall significance of effect will rise to minor adverse (not significant).</p>	<p>In the original scheme <0.1ha(<1%) of the holding was required on a permanent basis. AP2-006-013 will not require any land on a permanent basis and the original assessment will remain unaltered. Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible</p> <p>AP2-006-014 will increase the area of land permanently required to 1.2ha (5%); the assessment will remain negligible.</p>

7.8 Additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)

Soils and agricultural land classification

- 7.8.1 The agricultural land associated with this amendment has soil in the Blackwood association in the western end of the amendment near the Birkin Brook and near the Bollin Brook. The central area around Ashley, and western parts of the amendment between Thorns Green and Warburton Green, have soil in Salop association.
- 7.8.2 The main ES describes how the soils in the Blackwood association are commonly seasonally waterlogged (WC IV) and limited by soil wetness to Subgrade 3b. Where the land is under-drained, and the soil profiles are in WC I or WC II, the quality of the agricultural land may be increased to Grade 2 or Subgrade 3a, depending on how droughty the soils are during the growing season. Soils of the Salop association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b.
- 7.8.3 This amendment will require approximately 69ha of agricultural land classified as Subgrade 3b (65ha) and Subgrade 3a (4ha).

Assessment of effects on holdings

- 7.8.4 Table 14 sets out the baseline details of the holdings that will be affected by AP2-006-014 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on these holdings on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 14: Summary of assessment of effect on holdings (AP2-006-014)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/6 Millington Hall Farm – managed in hand by Tatton Estate (Arden Enterprises). Total area farmed 300ha. Arable and sheep. Buildings underused for agriculture, proposed commercial/residential development; house let on an Assured shorthold tenancy. Medium sensitivity to change.	In the original scheme 54ha (18%) of the holding was required for the construction of the Hulseheath north embankment, Millington cutting, Agden Brook viaduct and Agden Brook viaduct satellite compound, Millington Lane realignment, Ashley west and east embankments, Ashley Road diversion, Ashley railhead, utility diversions and soil stores AP2-006-014 will increase the area of land required by 2.9ha to 56.9ha (19%).	In the original scheme 19.4ha (7%) of the holding was required on a permanent basis. AP2-006-014 will marginally reduce the area of land permanently required by 0.1ha to 19.3ha (6%) of the holding. Land required: Low Severance: Medium Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to severance.

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>Land required: Medium Severance: Medium Access to severed farmland will be possible along public highways but access may be compromised during construction. Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of land required.</p> <p>Additional (or reduced) land is also required for: AP2-006-003 (minus 2.2ha); and AP2-006-006 (<0.1ha). Should all the amendments be adopted the total area of land required from this holding will be 54.7ha; 18%. The overall significance of effect will not be altered.</p>	<p>Neither AP2-003-003 nor AP2-006-006 require any land on a permanent basis so this assessment will not alter.</p>
<p>MA06/8 Yarwood Heath Farm including Cherry Tree Farm. Managed in hand by Tatton Estate (Marsh Partnership). 300ha arable and forage grassland managed by agricultural contractors. Commercial lets at Cherry Tree Farm. Medium sensitivity to change.</p>	<p>In the original scheme 74.7ha (25%) of the holding was required for the construction of the Rostherne cutting, Yarwood Heath Farm accommodation access realignment and overbridge, Birkin Brook embankment, Ashley infrastructure maintenance base – rail (IMB-R), Rostherne cutting satellite compound and transfer node, Blackburn’s Brook north viaduct west and east satellite compounds, Ashley IMB-R satellite compound and transfer node, utility diversions and soil stores. AP2-006-014 will increase the area of land required from this holding by 9ha to 83.7ha (28%). Land required: High Severance: Low Access to severed farmland will be possible using the Yarwood Heath Farm accommodation access realignment and overbridge and public highways. Disruption: Low Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>In the original scheme 30.7ha (10%) of the holding was required on a permanent basis. AP2-006-014 will increase this permanent requirement by 0.3ha to 31ha (>10%). Land required: Medium Severance: Low Access to severed farmland will be possible using the Yarwood Heath Farm accommodation access realignment and overbridge and public highways. Infrastructure: High Demolition of commercial properties at Cherry Tree Farm. Overall permanent assessment: Major/moderate adverse due to proportion of holding required and property demolition.</p> <p>No additional land is required for AP2-006-006. Additional land is required for AP2-006-003 (0.1ha). Should both these amendments proceed the total area of land permanently required will be 31.1ha (10%) of the holding. (AP2-006-006</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>Additional land will also be required for: AP2-006-003 (0.4ha); and AP2-006-006 (1.4ha). Should all these amendments be adopted the total area of land required from this holding will be 85.5ha (29%).</p>	<p>does not require any land on a permanent basis).</p>
<p>MA06/11 Ryecroft Farm* 54ha arable and grassland holding. Medium sensitivity to change.</p>	<p>In the original scheme 6ha (11%) of the holding was required for a utility diversion. AP2-006-014 will increase the area of land required during construction by 16.6ha to 22.6ha (42%). Land required: High Severance: Low Access to land whilst utility works are undertaken may be compromised. Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of holding required. This is an increase from moderate adverse in the original scheme.</p> <p>Additional land will also be required for AP2-006-006 (2.6ha). Should both these amendments be adopted the total area of land required from this holding during construction will be 25.2ha (47%) of the holding. The same changed major/moderate significant effect will occur.</p>	<p>The original scheme did not require any land on a permanent basis. AP2-006-006 will not alter this requirement. Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible.</p>
<p>MA06/19 Higher Thorns Green Farm 44ha owner occupied. Arable and beef holding with commercial equestrian livery (x40) stables. Care farm 'Fairfield Farm Project' also provided. Medium sensitivity to change.</p>	<p>In the original scheme 16.7ha (38%) of the holding was required for the construction of the Thorns Green embankment, River Bollin south embankment, M56 amendments, Brickhill Lane diversion, Castle Mill Lane diversion and satellite compound, utility diversions and soil stores. AP2-006-014 will increase this requirement by 4.4ha to 21.1ha (48%). Land required: High</p>	<p>In the original scheme 13.3ha (30%) of the holding was required on a permanent basis. AP2-006-014 will increase this requirement by 1.6ha to 14.9ha (34%) of the holding. Land required: High Severance: Medium Land severed accessible via public highways and HS2 access routes. Infrastructure: High Demolition of residential properties and agricultural buildings.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>Severance: Medium. Access to severed farmland will be possible along public highways and HS2 access routes but may be compromised during construction. Disruption: Low Activities on the care farm may need careful management whilst construction activities are being undertaken. Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p> <p>Additional land will also be required for AP2-006-013 (0.1ha). Should both these amendments be adopted the total area of land required from this holding will be 21.2ha (48%). The overall effect will remain unaltered as major/moderate adverse.</p>	<p>Overall permanent assessment: Major/moderate adverse due to the proportion of holding required and property demolition. AP2-006-013 does not require any land on a permanent basis.</p>
<p>MA06/24 Chapel House Farm Owner-occupied. 24ha equestrian (non-commercial). Low sensitivity to change.</p>	<p>In the original scheme 1.9ha (8%) of the holding was required for the construction of the Castle Mill Lane realignment, Castle Mill Lane satellite compound and utility diversions. AP2-006-014 will increase this requirement by 1.2ha to 3.1ha (13%). Land required: Medium Severance: Negligible Disruption: Low Riding of horses close to construction activities may need to be limited. Overall temporary assessment: Minor adverse This is change from negligible in the original scheme. Additional land will also be required for AP2-006-013 (0.1ha). Should both these amendments be adopted the total area of land required from this holding will be 3.2ha (13%). The same changed minor (not significant) effect will occur.</p>	<p>In the original scheme <0.1ha (<1%) of the holding was required on a permanent basis. AP2-006-014 will increase this requirement by 1.1ha to 1.2ha (5%). Land required: Negligible Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Negligible AP2-006-013 does not require any land on a permanent basis.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>MA06/25 Lower Thorns Green Farm Owner-occupied. 3.5ha grassland paddock. Low sensitivity to change.</p>	<p>In the original scheme 0.6ha (17%) of the holding was required for the construction of the Castle Mill Lane realignment. AP2-006-014 will increase the area of land required from this holding during construction by 2.8ha to 3.4ha (97%). Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse. This is a new significant effect and an increase from minor adverse in the original scheme.</p>	<p>In the original scheme 0.2ha (6%) of the holding was required on a permanent basis. AP2-006-014 will increase this requirement by 0.9ha to 1.1ha (30%). Land required: High Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse. This is a new significant effect and an increase from minor adverse in the original scheme.</p>
<p>MA06/26 Hale Bank Farm* 21ha grassland holding. Medium sensitivity to change.</p>	<p>In the original scheme 20.4ha (97%) was required during construction. AP2-006-014 will increase this requirement by 0.7ha to 21.1ha (100%). Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Major/moderate adverse due to the proportion of holding required.</p>	<p>In the original scheme 17.2ha (82%) of the holding was required on a permanent basis. AP2-006-014 will increase this requirement by 2.9ha to 20.3ha (97%). Land required: High Severance: Negligible Infrastructure: High Demolition of residential properties and agricultural buildings. Overall permanent assessment: Major/moderate adverse due to the proportion of holding required and property demolition.</p>
<p>MA06/27 Higher Doles Farm* 2.3ha grassland holding. Low sensitivity to change.</p>	<p>In the original scheme 0.6ha (26%) of the holding was required for the construction of a balancing pond and turning head. AP2-006-014 will increase the area of land required during construction by 1.6ha to 2.2ha (96%). Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p>	<p>In the original scheme 0.3ha (13%) of the holding was required on a permanent basis. AP2-006-014 will increase this requirement by 1.9ha to 2.2ha (96%). Land required: High Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required. This is a new significant effect and a change from minor adverse in the original scheme.</p>
<p>MA06/28 Land at Hale Barns</p>	<p>In the original scheme 14.5ha (91%) of the holding was required for the M56 east satellite compound and</p>	<p>In the original scheme 9ha (56%) of the holding was required on a permanent basis.</p>

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Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
<p>Owner-occupied. 16ha grassland holding use for hay/haylage production. Low sensitivity to change.</p>	<p>transfer node, Manchester Airport High Speed station north satellite compound, utility diversions and soil stores. AP2-006-014 will increase the area of land required from this holding during construction by 1.5ha to 16ha (100%) of the holding. Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p>	<p>AP2-006-014 will increase this requirement by 3.1ha to 12.1ha (75%). Land required: High Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required.</p>
<p>MA06/29 Land at Warburton Green* 5ha grassland holding. Low sensitivity to change.</p>	<p>In the original scheme 2ha (40%) of the holding was required for the Manchester Airport High Speed station cutting. AP2-006-014 will increase the area of land required from this holding during construction by 2.9ha to 4.9ha (98%). Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p>	<p>In the original scheme 1.3ha (26%) of the holding was required on a permanent basis. AP2-006-014 will increase this requirement by 3.6ha to 4.9ha (98%). Land required: High Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required.</p>
<p>MA06/31 Land east of A538 Hale Road, Hale* 8ha grassland holding. Low sensitivity to change.</p>	<p>In the original scheme 7.7ha (96%) of the holding was required for the Manchester Airport High Speed station, Hasty Lane diversion, Manchester Airport High Speed station satellite compound and transfer node, utility diversions and soil stores. AP2-006-014 will increase the area of land required from this holding during construction by <0.1ha but due to rounding the values remain as 7.7ha (96%). Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required. Additional land will also be required for AP2-006-018 (<0.1ha). Due to rounding, should both these</p>	<p>In the original scheme 7.5ha (94%) of the holding was required on a permanent basis. AP2-006-014 will reduce this requirement by 0.1ha to 7.4ha; 93%. Land required: High Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required. AP2-006-018 does not require any land on a permanent basis.</p>

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Agriculture, forestry and soils

MA01, MA02, MA03 and MA06

Agriculture, forestry and soils assessment

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	amendments be adopted the total area of land required from this holding will still be 7.7ha; 96%.	
<p>MA06/33 Land at Ash Farm* 108ha grassland holding. Medium sensitivity to change.</p>	<p>In the original scheme 10.6ha (10%) of the holding was required for the Manchester Airport High Speed station and retaining wall, access roads, Manchester tunnel south portal main compound and transfer node and utility diversions. AP2-006-014 will increase the area of land required from this holding by approximately 0.1ha to 10.7ha (10%). Land required: Low Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse Additional land will also be required for: AP2-006-018 (0.3ha); and AP2-006-022 (1.1ha). If all these amendments are adopted the total area of land required from this holding (allowing for rounding) will be 12.1ha; 11%.</p>	<p>In the original scheme 7.2ha (7%) of the holding was required on a permanent basis. AP2-006-014 will increase this requirement by <0.1ha to 7.3ha (7%). Land required: Low Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Minor adverse Additional land will also be required for AP2-006-022 (3.2ha). The total area required will be 10.5ha (10%) and the assessment will be remain unaltered. AP2-006-018 will not require any land on a permanent basis.</p>
<p>MA06/35 Tanyards Farm* 50ha grassland holding. Medium sensitivity to change. This is a newly affected holding.</p>	<p>Land required: High 19.6ha; 32% of holding required for the realignment of the M56. Severance: Medium Farm access across the M56 will be maintained with the provision of a new farm accommodation bridge but access may be compromised during construction. Disruption: Low Overall temporary assessment: Major/moderate adverse due to the proportion of holding required. This is a new significant effect.</p>	<p>Land required: Medium 10.3ha; 17% of holding required for AP2-006-014 Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required. This is a new significant effect.</p>
<p>MA06/36 Land at Mill Lane* 1.1ha grassland holding. Low sensitivity to change. This is a newly affected holding.</p>	<p>Land required: High 1ha; 93% of holding required for the realignment of the M56. Severance: Negligible Disruption: Low Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p>	<p>Land required: High 1ha; 93% of holding required for AP2-006-014. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required.</p>

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Agriculture, forestry and soils assessment

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	This is a new significant effect.	This is a new significant effect.
MA06/37 Land at Sunbank Lane* 4.7ha grassland holding. Low sensitivity to change. This is a newly affected holding.	Land required: High 4.5ha; 95% of holding required for the realignment of the M56. Severance: Negligible Disruption: Low Overall temporary assessment: Moderate adverse due to the proportion of holding required. This is a new significant effect.	Land required: High 4.3ha; 92% of holding required for AP2-006-014. Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required. This is a new significant effect.

* It has not been possible to arrange farm impact assessment interviews with these holdings. Publicly available sources have been used to obtain the information presented.

7.9 Additional land permanently required for modifications to the A538 Altrincham Road and Mobberley Road junction (AP2-006-015)

Soils and agricultural land classification

7.9.1 The agricultural land associated with this amendment has soil in the Salop association. This association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require 0.4ha of agricultural land in Subgrade 3b for construction.

Assessment of effects on holdings

7.9.2 Table 15 sets out the baseline details of the holding that will be affected by AP2-006-015 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on that holding on agricultural and related interests as a result of the implementation of this amendment.

Table 15: Summary of assessment of effect on holdings (AP2-006-015)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/40 Land at Altrincham Road* 2.1ha grassland holding. Medium sensitivity to change. This is a newly affected holding.	Land required: Medium 0.4ha; 17% of holding required for the construction of a new A538 Altrincham Road/Mobberley Road Junction. Severance: Negligible Disruption: Negligible	Land required: Low 0.2ha; 10% of holding required for the construction of a new A538 Altrincham Road/Mobberley Road Junction. Severance: Negligible Infrastructure: Negligible

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	Overall temporary assessment: Moderate adverse due to the proportion of holding required. This is a new significant effect.	Overall permanent assessment: Minor adverse.

** It has not been possible to arrange farm impact assessment interviews with this holding. Publicly available sources have been used to obtain the information presented.*

7.10 Additional land permanently required for modifications to Water Framework Directive (WFD) mitigation for Timperley Brook (AP2-006-018)

Soils and agricultural land classification

7.10.1 The agricultural land associated with this amendment has soil in the Salop association. These soils are slowly permeable and seasonally waterlogged (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require 1.1ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

7.10.2 Table 16 sets out the baseline details of the holdings that will be affected by AP2-006-018 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on these holdings on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 16: Summary of assessment of effect on holdings (AP2-006-018)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/31 Land east of A538 Hale Road, Hale* 8ha grassland holding. Low sensitivity to change.	In the original scheme 7.7ha; 96% of the holding was required for the Manchester Airport High Speed station, Hasty Lane diversion, Manchester Airport High Speed station satellite compound and transfer node, utility diversions and soil stores. AP2-006-018 will marginally increase the area of land required by <0.1ha but due to rounding the values remain as 7.7ha (96%).	In the original scheme 7.5ha; 94% of the holding was required on a permanent basis. AP2-006-018 will not require any land on a permanent basis and the assessment will remain unaltered. Land required: High Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Moderate adverse due to the proportion of holding required.

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Agriculture, forestry and soils

MA01, MA02, MA03 and MA06

Agriculture, forestry and soils assessment

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required. Additional land will also be required for AP2-006-014 (<0.1ha). Due to rounding, should both these amendments be adopted the total area of land required from this holding will still be 7.7ha; 96%.</p>	<p>AP2-006-014 will reduce the area of land required by 0.1ha, to 7.4ha; 93%; the assessment will remain unchanged.</p>
<p>MA06/33 Land at Ash Farm* 108ha grassland holding. Medium sensitivity to change.</p>	<p>In the original scheme 10.6ha; 10% of the holding was required for the Manchester Airport High Speed station and retaining wall, access roads, Manchester tunnel south portal main compound and transfer node and utility diversions. AP2-006-018 will increase the area of land required from this holding by approximately 0.3ha to 10.9ha (10%). Land required: Medium Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse. This is a change from minor adverse in the original scheme. Additional land will also be required for: AP2-006-014 (0.1ha); and AP2-006-022 (1.1ha). If all these amendments are adopted the total area of land required from this holding (allowing for rounding) will be 12.1ha; 11%.</p>	<p>In the original scheme 7.2ha; 7% of the holding was required on a permanent basis. AP2-006-018 will not require any land on a permanent basis and the assessment remains unaltered. Land required: Medium 7.2ha; 7% of the holding Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Minor adverse. Land will also be required for: AP2-006-014 (<0.1ha); and AP2-006-022 (3.2ha). If all the amendments are adopted the total area required will be 10.5ha (10%) and the assessment will remain unaltered.</p>
<p>MA06/39 Land at Brooks Drive* 2.6ha grassland holding. Low sensitivity to change. This is a newly affected holding.</p>	<p>The construction of AP2-006-018 will require 0.9ha; 38% of the holding, for mitigation of the Timperley Brook. Land required: High Severance: Low Access to severed farmland will be possible across an accommodation bridge. Disruption: Negligible</p>	<p>Land required: High 0.8ha; 30% of holding required for mitigation of the Timperley Brook. Severance: Low Access to severed farmland will be possible across an accommodation bridge. Infrastructure: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p>

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	Overall temporary assessment: Moderate adverse due to the proportion of holding required. This is a new significant effect.	This is a new significant effect.

** It has not been possible to arrange farm impact assessment interviews with these holdings. Publicly available sources have been used to obtain the information presented.*

7.11 Additional land permanently required for the extension of Metrolink provisions at Manchester Airport High Speed station (AP2-006-022)

Soils and agricultural land classification

7.11.1 The agricultural land associated with this amendment has soil in the Salop association. This association comprises slowly permeable and seasonally waterlogged soils (WC III to IV). They are developed in reddish glacial deposits (i.e., till and glaciofluvial sand and gravel deposits). The quality of the agricultural land is limited by soil wetness to mainly Subgrade 3a or Subgrade 3b. This amendment will require 1.4ha of agricultural land in Subgrade 3b.

Assessment of effects on holdings

7.11.2 Table 17 sets out the baseline details of the holdings that will be affected by AP2-006-022 in the Hulseheath to Manchester Airport (MA06) community area. It further details the temporary and permanent effects on these holdings on agricultural and related interests as reported in the main ES and any changes as a result of the implementation of this amendment.

Table 17: Summary of assessment of effect on holdings (AP2-006-022)

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
MA06/33 Land at Ash Farm* 108ha grassland holding. Medium sensitivity to change.	In the original scheme 10.6ha; 10% of the holding was required for the Manchester Airport High Speed station and retaining wall, access roads, Manchester tunnel south portal main compound and transfer node and utility diversions. AP2-006-022 will increase the area of land required from this holding by <0.1ha to approximately 10.7ha (10%). Land required: Low	In the original scheme 7.2ha; 7% of the holding was required on a permanent basis. AP2-006-022 will increase this requirement by 3.2ha to 10.4ha (10%). Land required: Low Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Minor adverse.

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Agriculture, forestry and soils

MA01, MA02, MA03 and MA06

Agriculture, forestry and soils assessment

Holding reference, name and description	Temporary impacts and effects	Permanent impacts and effects
	<p>Severance: Negligible Disruption: Negligible Overall temporary assessment: Minor adverse. Additional land will also be required for: AP2-006-014 (0.1ha); and AP2-006-018 (0.3ha). If all these amendments are adopted the total area of land required from this holding (allowing for rounding) will be 12.1ha; 11%.</p>	<p>Additional land will also be required for AP2-006-014 (0.1ha). The total area required will be 10.5ha (10%) and the assessment will remain unaltered. AP2-006-018 will not require any land on a permanent basis.</p>
<p>MA06/34 Land at Davenport Green* 26ha grassland holding. Low sensitivity to change.</p>	<p>In the original scheme 13.9ha; 53% of the holding was required for the Manchester Airport High Speed station and retaining wall, access roads, Manchester tunnel south portal main compound and transfer node. AP2-006-022 will increase the area of land required from this holding during construction by 1.3ha to 15.2ha (58%). Land required: High Severance: Negligible Disruption: Negligible Overall temporary assessment: Moderate adverse due to the proportion of holding required.</p>	<p>In the original scheme 3.2ha; 12% of the holding was required on a permanent basis. AP2-006-022 will increase this requirement by 0.8ha to 4ha (15%). Land required: Medium Severance: Negligible Infrastructure: Negligible Overall permanent assessment: Minor adverse.</p>

* It has not been possible to arrange farm impact assessment interviews with these holdings. Publicly available sources have been used to obtain the information presented.

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